



A.D. 1874, 10<sup>th</sup> JANUARY. N° 92.

SPECIFICATION

OF

CHARLES EDWARD BLAKE.

FOOL FOR STOPPING TEETH.

LONDON:

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A.D. 1874, 7th JANUARY. N° 92.

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### Foil for Stopping Teeth.

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LETTERS PATENT to Charles Edward Blake, of San Francisco, California, in the United States of America, Dentist, for the Invention of "IMPROVEMENTS IN DENTISTRY, THE SAME CONSISTING IN A MEANS OF DISGUIISING THE BRIGHT COLOR OF GOLD FILLING FOR TEETH, WHEREBY SAID FILLING IS ALSO RENDERED MORE DURABLE, AND ALSO OF AN IMPROVED METALLIC FOIL FOR DENTAL PURPOSES."

Sealed the 3rd March 1874, and dated the 7th January 1874.

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COMPLETE SPECIFICATION filed by the said Charles Edward Blake at the Office of the Commissioners of Patents, with his Petition and Declaration, on the 7th January 1874, pursuant to the 9th Section of the Patent Law Amendment Act, 1852.

5 TO ALL TO WHOM THESE PRESENTS SHALL COME, I, CHARLES EDWARD BLAKE, of San Francisco, California, in the United States of America, Dentist, send greeting.

WHEREAS I am in possession of an Invention for "IMPROVEMENTS IN DENTISTRY, THE SAME CONSISTING IN A MEANS OF DISGUIISING THE BRIGHT COLOR



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*Blake's Improved Foil for Stopping Teeth.*

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OF GOLD FILLING FOR TEETH, WHEREBY SAID FILLING IS ALSO RENDERED MORE DURABLE, AND ALSO OF AN IMPROVED METALLIC FOIL FOR DENTAL PURPOSES," and have petitioned Her Majesty to grant unto me, my executors, administrators, and assigns, Her Royal Letters Patent for the same, and have made solemn Declaration that I really believe myself to be 5 the first and true Inventor thereof.

NOW KNOW YE, that I, the said Charles Edward Blake, do hereby declare that the following Complete Specification, under my hand and seal, fully describes the nature of my said Invention, and the manner in which the same is to be performed, that is to say:— 10

My Invention relates to improvements in the material or metallic foils which are used in dentistry for restoring and filling decayed teeth, and teeth which have been worn down by grinding or attrition.

Numerous substances and compounds have been employed and are still in use for filling decayed teeth, but it is an acknowledged fact 15 amongst the dental profession that pure gold, owing to its quality of being easily condensed and solidified by pressure or percussion, and its unoxidizable and unchangeable nature is superior to any other metal or substance for this purpose. Pure gold, however, owing to its soft character, soon wears away, and to alloy it with other metals in order to 20 give it the desired degree of hardness will generally impair its adhesive properties so that it cannot be properly used as a filling, and besides this, its bright lustre or brilliancy causes a disagreeable glitter in the mouth which it is important to destroy.

My Invention consists in combining with the gold the metal platinum 25 either as an alloy or as a mechanical component.

Platinum is the only metal that compares with gold in purity, and although not possessing the quality of cold adhesion by percussion when two sheets or foils of platinum are compressed together, yet when sheets of gold and platinum are alternately used and condensed by 30 pressure or concussion a perfect cold welding or adhesion results. In filling or restoring teeth, therefore, I use alternate layers of gold and platinum foil so that the adhesion will be perfect, and a hard and durable filling is obtained.

In finishing the filling of the teeth a layer of platinum should be 35 employed, so that the bright color of the gold will be concealed, or



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fillings of platinum can be mixed with a gold surface and condensed into it so as to give the filling a mottled appearance.

By judicious manipulation almost any desired shade of color between a white and a yellow can be given to the filling approximating to the  
5 color of the enamel of the adjoining teeth.

If the disguising of the bright color of the gold is alone desirable the cavity of the tooth can be filled with pure gold, and the platinum only used in finishing the job. It is therefore plainly evident that teeth which have already been filled with gold can have the brilliancy of the  
10 gold destroyed by an outside dressing of platinum after the outside surface of the gold filling has been properly scraped and prepared.

In order to prepare a dental foil which possesses the property of cold adhesion by percussion, and also the requisite degree of hardness to resist wear and attrition, I prepare a chemical alloy of gold and platinum,  
15 and afterwards convert it into sheets or foil. The quality of the gold to be used in the manufacture of my dental alloy is not material, as in some gold a larger or smaller per centage of silver remains in combination after it is refined. This, however, will not prevent or interfere with the admixture of the platinum or injure the quality of the alloy after it is  
20 manufactured.

The amount of platinum to be used in any given quantity of pure or proof gold will be regulated by the degree of hardness which it may be desired to give the alloy.

The addition of two thousandth's ( $\cdot 002$ ) of pure platinum to nine  
25 hundred and ninety-eight thousandth's ( $\cdot 998$ ) of gold preferably one thousand (1000) fine, hardens and improves the gold for dental purposes, while it retains its great cohesive and adhesive qualities. In the manufacture of my hardest gold alloy I prefer to add, say five thousandth's ( $\cdot 005$ ) of platinum to nine hundred and ninety-five thousandth's ( $\cdot 995$ )  
30 of gold.

A greater proportion of platinum will increase the hardness of the alloy, but will also render it harder to manipulate, but this can always be remedied by galvanizing or electro-plating the sheets as herein-after described for platinum sheets. By this simple combination of two well-  
35 known metals I produce a dental gold of greater durability and fineness than ordinary gold, which will be especially valuable for crown fillings



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and the building up or the restoration of the edges of cutting teeth where the enamel is worn down.

My improvements also include the galvanizing or electro-plating of platinum sheets or foil, so that they can be used like ordinary gold foil for filling. To do this, I cover the platinum foil upon either one or both 5 sides with a coating of pure gold. This can be done by the electro-plating process, or in any other convenient or suitable manner. When thus prepared, platinum foil can be used for filling and restoring decayed teeth in the same manner that gold leaf or foil is now used, and at the same time it will provide the required durability. 10

Having thus described my Invention, what I claim and desire to secure by Letters Patent is,—

First. A filling for teeth consisting of the usual base covered with a stratum of platinum or other metal approximating to the color of the enamel of the teeth as set forth. 15

Second. The chemical admixture or alloy of platinum and gold for the purpose of providing an improved dental gold, substantially as above specified.

Third. As a new article of manufacture, platinum foil or leaf coated with gold either upon one or both sides, substantially as and for the 20 purpose above described.

In witness whereof I, the said Charles Edward Blake, have hereunto set my hand and seal, this Eighteenth day of December, in the year of our Lord, A.D. One thousand eight hundred and seventy-three. 25

CHARLES EDWARD BLAKE. (L.S.).

Witnesses,

GEO. H. STRONG.

C. M. RICHARDSON.

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LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1874.